



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME**  
**CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING**

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**ENDORSEMENT OF METHODS OF ANALYSIS AND SAMPLING PLANS FOR PROVISIONS IN CODEX STANDARDS**

*(Prepared by Argentina, Brazil and Uruguay with the support of Colombia, Costa Rica, Cuba, Dominica, Ecuador, Guyana, Jamaica, Panama and Perú)*

REFERRED TO THE ISO 5537 I IDF 26 STANDARD FOR MOISTURE FOR POWDERED DAIRY PRODUCTS, we want to recall what was stated at the 41st CCMAS meeting, having presented the CDR25 regarding the fact that the use of this method could cause limitations in trade (par. 8 CCLAC21-Part 2)

The ISO 5537 I IDF 26 method has as its principle of measurement humidity by drying in a specifically designed oven at 87 °C for 5 hours while an air current of specified composition passes through the sample at a fixed flow of 33 ml. /min. This method requires equipment and other specific inputs, including a uniquely designed stove, flow calibration capabilities, and air composition not readily available in the region, generates additional costs and waste to the environment that do not allow its applicability in all countries, a requirement for the officialization of a Codex method.

We understand this method is exclusive in terms of equipment and field of application for powdered milk products, therefore it deviates from the method selection criteria available in the Codex Manual of Procedures, especially considering its practicability and applicability under normal conditions. of the laboratory and the preference of uniform methods to several groups of matrices.

Pursuant to the conclusions agreed at the 41st CCMAS meeting regarding this point (REP21/MAS par. 42), practicable alternative methods were studied in the different countries for the purpose of evaluating their performance data and compliance with the General Criteria for the selection of methods of analysis established in the Codex Manual of Procedures.

From the results obtained from this study, the method described in the Annex is proposed.

It is a method that is aligned with the criteria required to be proposed as a Codex method with the following characteristics:

- Proven safety based on performance data appropriate to the related product standard
- Practicable and commonly used in laboratories
- Principle of measurement of similar characteristics to the one used when establishing the technical specifications of the product standard
- Codex general method applicable to several products
- Equipment with greater ease of access and calibration
- It does not require specific inputs nor does it generate waste that affects the environment

**ANNEX – Test method**

Products	parameters
Powdered milk, Powdered cream, Powdered permeated milk, Infant formulas and Mixture of skimmed milk powder with vegetable fat	Humidity
<p><b>DESCRIPTION OF THE METHOD: DETERMINATION OF MOISTURE</b></p> <p><b>1. SCOPE</b> This Standard specifies a method for the determination of moisture content for all types of powdered milk, powdered creamer, powdered permeated dairy products, infant formulas, and mixtures of powdered skimmed milk with vegetable fat.</p> <p><b>2. DEFINITION</b> Moisture content is the mass loss determined by the procedure specified in this Standard. It is expressed in percentage by mass g/100 g.</p> <p><b>3. PRINCIPLE</b> A portion of the sample is dried in an oven set at (102+ 2) °C until constant weight and weighed to determine the loss of mass.</p> <p><b>4. EQUIPMENT</b> Common laboratory equipment and, in particular, the following.  <b>4.1. Analytical balance</b>, capable of weighing with a precision of 1 mg, with minimum division 0.1 mg.  <b>4.2. Drying stove</b>, with good ventilation, as far as possible with forced ventilation, capable of being thermostatically maintained at (102 + 2) °C in the entire work space, with temperature controller.  <b>4.3. Desiccator</b>, with freshly dried silica gel with hygrometric indicator or another effective desiccant.  <b>4.4. flat bottom capsules</b>, approximately 25mm deep, approximately 50mm in diameter, and made of a suitable material (eg glass, stainless steel, nickel or aluminum), fitted with close-fitting and easily removable covers.</p> <p><b>5. SAMPLING</b> It is important that the laboratory receive a truly representative sample and that it has not been damaged or changed during transport or storage. Sampling is not part of the method specified in this Standard. A recommended sampling method is provided in ISO 707.</p> <p><b>6. TEST SAMPLE PREPARATION</b> Transfer the entire sample to a dry, tightly closed container with a capacity of approximately twice the volume of the sample. Mix thoroughly by turning and shaking the container.</p> <p><b>7. PROCEDURE</b></p> <p><b>7.1 Preparation of the dish.</b></p> <p>7.1.1. Heat the uncovered capsule and its lid (4.4) in the stove (4.2) controlled at (102 + 2) °C, for 1 h.  7.1.2. Transfer the capped dish to the desiccator (4.3), allow it to cool to room temperature in the balance room, and weigh (4.1) to the nearest 0.1 mg.</p> <p><b>7.2. test sample</b></p> <p>7.2.1. Place approximately 1 - 1.5 g of the prepared test sample (6) in the dish, cover with the lid and weigh to the nearest 0.1 mg.</p> <p><b>7.3. Determination</b></p> <p>7.3.1. Uncover the capsule and place it together with the lid in the oven (4.2), controlled at (102 + 2) °C for 2 h.  7.3.2. Replace the cap, transfer the capped dish to the desiccator, allow to cool to balance room temperature, and weigh to the nearest 0.1 mg.  7.3.3. Uncover the capsule and heat again, along with its lid, on the stove for 1 h. Then repeat operation 7.3.2.</p>	

7.3.4. Repeat this process until the difference in mass between two successive weighings does not exceed 0.5 mg. Record the lowest mass.

## **8. CALCULATION AND EXPRESSION OF RESULTS**

### **8.1. Calculation**

The moisture content in the sample, expressed in g/100 g, is equal to:

$$\text{Humidity} = \frac{(m_1 - m_2)}{(m_1 - m_0)} \times 100$$

where,

$m_0$  is the mass, in grams, of the dish and lid (7.1.2)

$m_1$  is the mass, in grams, of the dish, lid and test sample before drying (7.2.1)

$m_2$  is the mass, in grams, of the dish, lid and test sample after drying (7.3.4)

### **8.2. Expression of test results**

Express the sample results to two decimal places.